

The CEO's Guide to Next-Level Business Transformation and Resilience

How to Lead Your Organization from Ambition to Impact

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Foreword

What will it take to drive business transformation in an uncertain economy? As leaders, we're facing cost constraints, geopolitical headwinds, regulatory and policy changes, and shifting market dynamics.

The pressure to adapt quickly – while maintaining operational excellence – grows stronger every day. While we may not always have all the answers, we can't lose sight of the business initiatives we can control. Leading companies play the long game, searching for pathways to sustainable growth.

Regardless of momentary market shifts, sustainability must move forward on the corporate agenda. Climate risk is financial risk. The terminology may change, but the opportunities for growth, innovation, and market leadership in a low-carbon economy continue.

So, what will the path toward business resilience look like in this uncertain future? Can businesses not just adapt, but excel through smart risk management? Will climate initiatives stay the course despite the political, trade, and market headwinds?

As business leaders, you are pivotal to driving innovation. You can implement emerging practices, such as digitally-enabled sustainability and proactive energy management, to unlock economic value. Centering resilience as a strategic priority for your company is your key to remaining adaptable.

This guide provides proactive strategies to developing a more robust business model that can optimize resource use, manage risks, and harness the power of digitalization. Let's commit to leading a global business community that prioritizes sustainable practices to foster growth and vitality for the broader economic landscape.



Steve Wilhite President Schneider Electric Sustainability Business The terminology may change, but the opportunities for growth, innovation, and market leadership in a low-carbon economy continue.





Executive Summary

What we prioritize this decade will determine our fate for decades to come. *"We are the last generation that can prevent irreparable damage to our planet,"* commented María Fernanda Espinosa Garcés, UN General Assembly President (Ecuador) at a <u>Climate and Sustainable Development meeting</u> in March 2019. That was five years ago.

Today, the climate crisis has intensified. Global temperatures continue to rise, causing more frequent and severe weather events and placing tremendous stress on food and water supply, species and habitats, natural resources, infrastructure, and energy security. These impacts have a further domino effect on the global energy market, resulting in unpredictable energy supply and demand, and disrupting business operations, supply chains, and the economy at large.

The global business community has a critical role in accelerating climate change mitigation and adaptation by incorporating sustainable business transformation strategies *as an economic tool* to achieve positive outcomes by the end of this decade. This guide outlines what we forecast as the next-level sustainability practices and strategies necessary to respond to increasing climate risks and resource constraints. These practices include:



Fast-tracking climate adaptation plans to protect critical systems, infrastructure, and operations from climate-induced risks.



Implementing circular strategies to optimize material use, minimize waste, and advance recycling efforts, alleviating resource constraints, reducing emissions, and improving operational efficiencies.



Leveraging energy management as a strategic tool across the enterprise to build system resilience and reduce energy consumptions and emissions through the integration of renewables, electrification, and energy efficiency.



These strategic measures go beyond foundational sustainability practices and can enrich ESG performance, address evolving regulatory requirements, and unlock new opportunities with digital innovation. This guide offers actionable measures and solutions that CEOs and their businesses can apply today to drive long-term commercial performance in a low-carbon economy.

Sources:

- 1. https://climate.copernicus.eu/copernicus-june-2024-marks-12th-month-global-temperature-reaching-15degc-above-pre-industrial
- https://www.weforum.org/stories/2024/01/why-businesses-are-waking-up-to-the-threat-of-nature-related-risks/



The intricate relationship between nature and business is undeniable and has large-scale economic impacts:

50%+

Over half of the world's GDP relies on nature and resources to provide ecosystem goods and services.¹

\$1.3T

Climate change will have a direct impact on the bottom line, costing companies \$1.3 Trillion by 2026.²

Introduction

What if we could alter the trajectory of climate change by restoring balance to the natural environment and gaining energy equilibrium? What actions might we take to drive the greatest impact? What if these actions also led to a profound shift in the way businesses operate, widening avenues for innovation, resilience, and sustainable growth?

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Corporate commitments

Business leaders consistently rank sustainability as a **top priority** and there is a significant increase in the number of companies with science-based targets.³



Digital innovation

Technologies are **readily available** to bring seamless system connectivity, automated reporting, collaboration tools, and faster outcomes.

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Market demand

Sustainability is a top purchasing criterion for corporate buyers, with **over one-third of companies** willing to leave suppliers that don't meet their sustainability criteria.⁴



Standards and regulations

Climate disclosure standards and carbonreduction policies and incentives have given rise to climate transition plans and energy procurement strategies.⁵

But these initial measures are not enough, as evidenced by the continual rise of emissions and increasing impacts of pollution and waste on the biosphere. Corporate leaders must step up their actions by adopting next-level sustainability practices to maintain competitive advantage, future-proof business against climate-related disruptions, meet stakeholder expectations, and address evolving regulatory requirements.

Sources:

- 3. https://sciencebasedtargets.org/resources/files/SBTiMonitoringReport2023.pdf
- 4. https://www.bain.com/insights/how-to-master-art-of-selling-ceo-sustainability-guide-2024/
- 5. https://www.se.com/ww/en/insights/sustainability/impact-company/corporate-progress-toward-net-zero-a-c-level-pulse-check/





Four emerging practices can help leaders transform not only their approach to sustainability but their approach to market. These practices can unlock opportunities for growth, innovation, and market leadership in a low-carbon economy while simultaneously reducing both physical and transition risks. These practices include:

Climate Adaptation

Climate adaptation planning is a next-level approach to risk management. Fast-track climate adaptation into strategic planning to elevate the interdependence between climate-related risks and business operations.

The Circularity Imperative

Collectively, we are using natural resources twice as fast as our planet can regenerate them. Circularity optimizes material use, minimizes waste, and advances recycling practices, providing a lifeline for planet equilibrium and resource replenishment to sustain business operations.

Proactive Energy Management

Businesses that adopt intelligent, energy-aware operations will have a distinct advantage. With energy accounting for over 75% of GHG emissions, energy management is critical and needs to be prioritized across the enterprise and value chain.



Digital Technologies

Digital solutions can elevate business performance and drive sustainability measures by harnessing the power of data to achieve targets, ensure compliance, and optimize resources – while heightening operational efficiencies and business resilience.

Putting these approaches into practice will require adaptability, alignment, and execution across the business and beyond. C-level leaders must move past the sustainable needs of today to transform their businesses for an increasingly uncertain future, amidst continuously evolving regulatory, political, and stakeholder expectations.

The stakes for *inaction* are high: more than half (52%) of companies listed in the Fortune 500 in 2003 don't exist today. This decline is largely attributed to the lack of innovation, poor strategic decisions, and marketing strategy misaligned with industry trends, among other factors.⁶

Let's take a closer look at each of the four next-level sustainability practices.

"Those that thrive are quick to read and act on signals of change...a company must have its antennae tuned to signals of change from the external environment, decode them, and quickly act to refine or reinvent its business model and even reshape the information landscape of its industry.

Harvard Business Review

Source:

6. https://finance.yahoo.com/news/insight-report-finds-52-companies-163000568.html



Climate Adaptation

Call to Action:

Climate adaptation planning is a next-level approach to enterprise risk management. Businesses must identify physical and transitional climate risks, financial impacts, and adaptation opportunities and integrate these plans into their overall risk management strategy. Business leaders are urged to fast-track climate adaptation to protect critical systems, infrastructure, and operations from climate changerelated environmental and economic risks.

Why it Matters:

Climate risks are financial risks. Failure to have a climate adaptation plan will be the secondlargest risk for companies this decade. Progress has been slow with the vast majority of companies still in an exploratory phase. Currently, only one in every five companies have a strategy to effectively adapt to the risks associated with climate change.

It's Time to Fast-Track Planning

Climate-related disasters have become nearly five times more frequent today than they were 50 years ago, resulting in approximately \$4 trillion in economic losses.⁷ Unfortunately, additional challenges may lie ahead. Extreme weather events are expected to surge, almost tripling by 2030.⁸ If the past serves as an indicator of future outcomes, the escalation of extreme weather events will pose significant risks to infrastructure, business operations, and the environment, resulting in substantial financial impacts. It's crucial to understand that climate risks are financial risks.

The following are core examples of how climate risks are impacting infrastructure, energy systems, businesses, and the environment at large:

Business Impacts: Companies already rely on risk management strategies to protect themselves against cyber threats and other vulnerabilities. Climate adaptation planning is a next-level approach to risk management. This strategy involves assessing and addressing physical climate risks associated with asset damage or supply chain disruptions, and transitional climate risks such as penalties, divestments, or other potential losses linked to an ill-prepared energy transition plan.



Source: Creating Sustainable Impact: Building Resilience Through Climate Adaptation, December 2024 [link]

Despite the widespread implications for businesses, infrastructure, the environment, and energy systems, most companies remain in a holding pattern. S&P Global reports that only one in five companies currently has a plan to adapt to risks associated with climate change.⁹ In a <u>recent study</u> conducted by Schneider Electric's Sustainability Business, similar results are identified. While one-third of survey respondents (38%) said they have a climate adaptation plan—only 6% have implemented measures. Moreover, nearly one-third of respondents said climate events have impacted their local communities, business activities, and supply chains.

Sources:

- 7. https://wmo.int/media/news/weather-related-disasters-increase-over-past-50-years-causing-more-damage-fewer-deaths
- 8. https://www.undrr.org/gar/gar2022-our-world-risk-gar
- 9. https://www.spglobal.com/esg/insights/adaptation-planning-is-the-next-step-for-companies-to-prepare-for-climate-risk



Infrastructure Damage: Rising sea levels and extreme weather events can bring trade ports, railways, manufacturing plants, and other critical infrastructure to a grinding halt. Close to 90% of all ports worldwide are exposed to damaging climate hazards, placing tremendous economic constraints on supply chains and global trade.¹⁰

Energy Volatility: Extreme weather events significantly impact energy systems, leading to power outages and altering consumption patterns. These disruptions contribute to elevated energy costs and undermine energy generation. For example, water stress—caused by drought, overexploitation, and other factors—threatens nearly half of the world's thermal power plant capacity. Incidentally, one-third of freshwater-cooled thermal power plants are situated in areas experiencing high water stress.¹¹ This situation poses serious challenges for the resilience and operational performance of hydropower plants, potentially resulting in electricity shortages, reduced output, or intermittent power supply for communities and businesses.

Biodiversity Loss: Droughts, floods, wildfires, and other climate-induced catastrophes are depleting land and water resources, diminishing crops, and destroying natural habitats, which in turn, place stress on the environment, food supply, and the availability of materials and natural resources.

Water, in particular, has become an increasingly-critical issue within the climate crisis. Wetlands, lakes, rivers, and groundwater aquifers are severely impacted by climate change, pollution, and overexploitation, compromising their ability to supply essential water to communities. Studies show that in the next five years, global freshwater demand will exceed supply by 40%. This impending water scarcity will affect industries across all sectors, influencing how energy is producted and how goods are manufactured, transported, and distributed.

When we consider that 90% of biodiversity loss is caused by five core factors: land degradation and habitat destruction, overexploitation of resources, climate change, pollution, and invasive species, it's critical for businesses to assess their company's impact on these factors. <u>Nature-based Solutions (NbS)</u> such as wetland restoration, reforestation and afforestation, and sustainable agriculture help counteract biodiversity loss by protecting, managing, and restoring ecosystems, addressing climate mitigation and adaptation needs.

Download this e-book: The Why, What, and How of Corporate Biodiversity Action

Sources:

- 10. https://www.ox.ac.uk/news/2023-01-12-international-trade-and-world-economies-exposed-multi-billion-dollar-climate-risk
- 11. https://www.eco-business.com/opinion/water-stress-threatens-nearly-half-the-worlds-thermal-power-plant-capacity/





Mind the Gap

With climate change impacts surging and business risks at heightened levels, why is the gap between climate planning and action so wide? The World Economic Forum suggests "many companies do not regard the physical impacts of climate change as a significant risk. Mostly because near-term extreme weather events are hard to predict and can be insured against, while longer-term permanent changes to climate conditions may be seen as falling outside current planning timeframes."

There may also be other factors at play that impede climate adaptation efforts: financial constraints and regulatory uncertainties.

Financial Constraints: Climate risk mitigation requires funding. According to the UN Adaptation Gap Report, there is a growing disparity between the funds needed for adaptation efforts and the actual finance available, with the shortfall estimated to be between \$194 billion and \$366 billion USD annually.¹² This highlights the urgent need to bridge the financial gap to adequately address the impacts of climate change.

Based on an analysis of over 12,000 companies and worst-case warming scenarios, the average business could experience losses of approximately USD \$0.45 for every \$1 of cumulative operating cash generated from their ongoing business activities between now and 2050.¹³

The previously cited <u>research study</u> by Schneider Electric's Sustainability Business also found that 30% of the companies surveyed currently do not have budget allocated to address the financial impacts of climate risks. Corporations must proactively invest in climate finance strategies for mitigation, adaptation, and resilience-building. This financing can come from different sources (i.e. public or private, national or international, bilateral or multilateral) and in various forms (e.g. grants and donations, green bonds, equities).

Regulatory Uncertainties: There is a growing sense of uncertainty and scrutiny among corporations as climate risk disclosure frameworks evolve from voluntary to mandatory. The landscape is shifting, and stakeholders should remain attentive to upcoming developments. Globally, the <u>International Financial Reporting Standards (IFRS)</u> board issued its voluntary global sustainability disclosure standards and included scenarios to assess physical climate risks. In the U.S., concerns arise regarding the current administration's policies on climate progress and regulation.



Download this California Climate Laws Guide for disclosure requirements for USbased companies that do business in the state.

Despite federal setbacks, the demand for climate transparency and accountability is expected to continue to persist at a state level.

State-level legislation focused on climate, such as <u>SB 253</u>, <u>SB 261</u>, and the recently enacted <u>SB 219</u>, will continue to hold companies accountable for their emissions and climate risk disclosures. Additionally, large U.S. companies operating internationally will still be subject to reporting requirements under the CSRD, mandating extensive climate and sustainability disclosures for multinational firms operating in Europe. Even in the absence of federal support, the private sector is likely to maintain a focus on climate reporting.

Sources:

12. https://www.unep.org/resources/adaptation-gap-report-2023

13. <u>https://www.forbes.com/sites/globalcitizen/2023/07/16/new-data-reveals-climate-change-risks</u>



Planning for 'Long-termism' in the Short-term

Whether your company faces climate change impacts in the short term or in the future, implementing a 'long-termism' approach to your business planning must involve climate adaptation. This could be the competitive factor between companies that *rebound* or *recoil* when faced with climate-induced adversity.

The following are recommendations that business leaders may want to consider as they plan climate adaptation strategies:

- Perform a <u>climate scenario analysis</u> to identify the climate risks that apply to the company and which risks are most material to guide your climate adaptation plan. This involves assessing physical and transitional risks to identify and prioritize climate mitigation and adaptation measures.
- Because climate risks result in financial risks, it's important to assess the <u>financial impacts of</u> <u>physical risks</u>. A quantitative assessment of both exposure and vulnerability is needed to estimate potential financial impacts. Financial risks can arise from direct impacts such as increased capital costs due to damage to buildings and equipment and/or indirect impacts such as reduced revenue from decreased production capacity due to disruption in the supply chain.
 - Invest in <u>nature-based solutions</u> to protect, manage, and restore natural ecosystems. Expand your company's reach in innovative projects through voluntary carbon offsetting, agroforestry, ecological restoration, and other efforts to support human well-being, biodiversity, and disaster avoidance. Nature-based solutions reduce risk exposure in operations and supply chains, improve business performance, and reduce the business impact on nature and biodiversity.

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Adopting a nature-positive strategy is valued globally at **\$10 trillion** in additional annual business value and **395 million** jobs by 2030. International Institute for Sustainable Development

By strategically leveraging these opportunities, organizations can not only mitigate climate risks but also thrive in a rapidly-changing business environment. It's imperative for C-level teams to fast-track climate adaptation planning and drive this next-level approach to risk management—protecting critical systems, infrastructure, and operations from climate risks.

Learn how EcoAct Climate Risk (ECLR) can help identify climate risk vulnerabilities associated with 28 climate change hazards, across your company's physical sites.

New Report:

<u>Creating Sustainable Impact:</u> <u>Building Resilience Through</u> <u>Climate Adaptation</u>

Explore how businesses in various industries and regions are addressing the urgent need for climate adaptation. This report delves into both qualitative and quantitative research to highlight the gaps, opportunities, and advancements in adaptation strategies. Developed by <u>Schneider Electric's</u> <u>Sustainability Business</u>, in partnership with <u>Women Action Sustainability</u>.

S The Circularity Imperative

Call to Action:

Business leaders must evolve strategies and incorporate circularity practices to optimize material use, minimize waste, and advance recycling practices for improved resource management and reduced energy consumption across operations.

Why it Matters:

Businesses rely heavily on natural ecosystems for the production of goods and services. Collectively, we are using natural resources nearly twice as fast as our planet can regenerate them. Circularity is the lifeline for planet equilibrium and resource replenishment. Circularity represents an economic and industrial model to minimize waste while maximizing the use of secondary resources. Business leaders have an opportunity to lead the charge by transforming how materials and products are reused, refurbished, remanufactured, and recycled to extend the lifespan of resources.

What Goes Around, Must Come Back Around

Over the past two decades, global material consumption has surged. Over 100 billion gigatons of materials were extracted in 2023, much of which was wasted, lost, or unavailable for reuse.¹⁴ Compounding this is the fact that 45% of all GHG emissions are tied to how we consume and produce.¹⁵ Moreover, the share of secondary materials used globally has decreased from 9.1% in 2018 to 7.2% in 2023.¹⁶ These activities unequivocally have an impact on our everyday lives—from the products we purchase, use, and dispose of, to the food we buy, consume and waste. But perhaps even more profound is the impact on the food chain before it even gets to our plates: 13% of the food destined for human consumption is lost after harvesting.

Circularity is the lifeline for resource replenishment:

this strategy or concept represents an economic and industrial model to minimize waste and maximize the use of secondary resources. But circularity only works if we fundamentally rethink how products, services, and solutions are designed, used, and reutilized. Circularity involves transforming traditional linear models of production and consumption into closed-loop systems where resources are kept in use for as long as possible. This approach allows the decoupling of economic growth from resource consumption, allowing businesses to improve resource utilization and innovate new business models, such as offering products as services and leveraging sharing economy platforms.

Businesses have an opportunity to lead the charge by transforming how materials and products are reused, refurbished, remanufactured, and recycled to extend the lifespan of resources. Corporate leaders can mitigate regulatory reporting risks and reduce reliance on finite resources while lowering carbon emissions by monitoring material use and resource allocation throughout the value chain. The following are key approaches for business leaders to consider as they build out circularity practices:

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Natural capital: the core of circularity is to protect the environment and to prevent biodiversity loss and natural resource depletion. We rely on the natural ecosystem for crops, water, raw materials, energy, among other essential needs. If biodiversity continues to decline unabated, nature's ability to supply essential resources will have sweeping repercussions for global supply chains, business continuity, and corporate bottom lines. Currently, companies are extracting natural resources **nearly twice as fast** as the planet can regenerate them,¹⁷ highlighting the urgent need for change. Read this <u>blog post</u> to learn about frameworks and protocols to help businesses track, set goals, to reduce biodiversity loss.



Electric

Sources:

- 14. https://www.circularity-gap.world/2023
- 15. https://www.ellenmacarthurfoundation.org/completing-the-picture
- 16. https://www.circle-economy.com/news/global-circularity-rate-is-falling-steadily
- 17. https://www.weforum.org/stories/2023/08/earth-overshoot-day

Confidential & Proprietary. Prepared by Schneider Electric | 11

Businesses must optimize and preserve natural capital by managing finite resources, such as water, by implementing circularity measures to restore degraded ecosystems, such as forests and wetlands, which contribute to flood control, carbon sequestration, and biodiversity conservation. The Taskforce on Nature-Related Financial Disclosures (TNFD) emphasizes that businesses face both short-term risksfinancial, reputational, and ethical-and long-term risks, including competitiveness for raw materials and dependencies on ecosystem services, due to the global decline in biodiversity. Understanding and taking action to mitigate these risks is a crucial step for businesses committed to sustainability.



Cradle-to-cradle manufacturing aims to replace the linear economy with continuous circularity practices. The global economy continues to follow a deeproted linear mindset, where businesses and individuals take materials from the earth, make them into products that often have short lifespans, and then dispose of the materials used to create the products by sending them to a landfill. Cradle-to-cradle manufacturing is based on the reusability of all products and materials. At the end of the product life cycle, raw materials are returned to the value chain to continuously circulate all materials without loss or waste.

Supply chains continue to face challenges due to volatile raw material prices and global disruptions that have driven production costs up. Embracing circularity can help mitigate these challenges by reducing the demand for raw products and subsequently lowering material costs. Additionally, the reshoring of critical industries and the regionalization of supply chains present opportunities for material recovery and increased remanufacturing. Finally, optimizing supply chains through improved tracking and management of resources, components, and products—both upstream and downstream—can enhance analytics and reduce costs. Circularity not only diversifies and strengthens supply chain resilience but also helps lower value chain emissions. To transform traditional linear supply chains into circular systems, it is crucial to expand reverse supply chains, refurbishing, repair, and recycling efforts.

Consumer demand: the growing interest among customers to engage with eco-conscious businesses aligns with the principles of circularity. As climate concerns rise, trusted circular products are likely to attract climate-conscious consumers. Additionally, the establishment of digital marketplaces and the use of AI algorithms can facilitate the exchange and reuse of products, components, and materials. These innovations create new business models aimed at extending product lifespans and reducing waste generation, further supporting sustainable consumer choices.



Circularity at a Crossroads

Despite the essential benefits of circularity, the trend is moving in the wrong direction.

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Life Is On

<u>The Circularity Gap Report 2023</u> states that today's global economy is only 7.2% circular, a drop from 8.6% in 2020 and 9.1% in 2018. This decline may stem from various challenges businesses encounter while advancing circularity approaches, namely:

Internal alignment across business functions: a primary barrier for companies pursuing circularity is the lack of a coherent ecosystem that includes peer companies, suppliers, industry consortia, technology and data partners, NGOs, and regulators. A shared ambition among these stakeholders is vital for transitioning to a circular strategy.

Lack of clear policies and regulations: gaps in policies and regulations may hinder the transition to a circular economy, making it difficult for some businesses to implement changes. However, advancements in circular incentives and regulations are evolving in many regions. Since 2016, over 70 global roadmaps for circularity have been developed, including initiatives such as the Circular Economy Action Plan (CEAP), the EU's Corporate Sustainability Reporting Directive (CSRD), the Circular Economy Promotion Law in China, the National Recycling Strategy in the US, among others. The Global Circularity Protocol for Business (GCP) also provides a comprehensive framework to help companies accelerate their circularity efforts across their enterprises.

Difficulty tracking and measuring resource allocation: accurately tracking and measuring the allocation and use of resources to monitor progress can be challenging, but it doesn't need to be. Emerging digital solutions for supply chain management, such as product lifecycle assessment and management, reverse logistics, and data management and reporting tools are pivotal to driving circularity across an organization. Supply chain optimization technologies are also available to improve tracking, help with the management of resources and reduce carbon emissions throughout an organization's value chain.

Addressing these challenges is essential to fostering a more circular economy and unlocking its potential benefits. Collaborating with suppliers, industry consortiums, policymakers, and partners who can guide circularity practices across your organizations is a critical best practice.

Learn how Zeigo Hub by Schneider Electric can help organizations decarbonize their supply chain by providing data collection tools, carbon reduction strategies and

educational resources.

Circularity in Practice at Schneider Electric

The following principles offer a transformative approach to circularity. These practices are widely implemented at Schneider Electric and demonstrate the impacts that can be achieved with circularity approaches.



Design and innovate: involves product development and innovation and is central to maximizing value retention, influencing up to 80% of a product's lifecycle impact.

Use better: sourcing materials and manufacturing products as sustainably as possible, with minimal waste.. Schneider Electric went from using 7% sustainable material content in 2021 to 29% in 2023, with the aim of reaching 50% in 2025. Similarly, Schneider Electric's use of sustainable packaging rose from 13% to 63% in the same period, with the goal of reaching 100% primary and secondary packaging by 2025. Gain full insights in this <u>article</u>.

Beyond using recycled materials and renewable energy, smart factory operations (i.e. digitized shopfloor, connected machines, etc.) also contribute to circularity by creating new forms of efficiency and flexibility. Schneider Electric's smart factory in Hyderabad, India reduced energy consumption by 59%, water consumption by 57%, CO_2 emissions by 61%, while improving waste optimization by 64%.

The World Economic Forum recognized Schneider Electric's Hyderabad factory as a Sustainability Lighthouse. Read more

Perspectives Virtual:

The Power of Circular Business Models

Tune into this webinar replay for actionable insights on how to transform business models with circularity practices. Watch now **Use longer:** this stage extends the lifespan of products to delay the need for new ones. It involves condition-based repair and digitally enabled maintenance and equipment modernization services. Schneider Electric launched its EcoFitTM retrofit services to facilitate equipment upgrades by replacing components with connected technologies rather than replacing entire systems. <u>Watch this video</u> for more information on EcoFit retrofit services.

Use again: this covers the recirculation of products, parts, and materials, including the refurbishing and reselling of assets that are reaching their end of use. Through Schneider Electric's refurbishing and repackaging pilot program in France, the company is using digital tracing and reverse logistics for the end-of-use stage. Once a product is recollected at Schneider Electric, it is examined for repair, reuse, refurbish, or recycle. This practice has reduced the company's primary resource consumption by over 300,000 tons since 2017. Learn more here.



Proactive Energy Management

Call to Action:

Energy management at site levels is becoming table stakes. It's time to take energy management to new levels, building resilience, reducing operational downtime, and lowering energy consumption across the enterprise and value chain.

Why it Matters:

Access to reliable energy is fundamental for business operations and growth. With energy accounting for over 75% of greenhouse gas (GHG) emissions, there's an urgent need to transition to low-carbon energy sources and the strategic management of energy consumption. Energy volatility and climate-related disruptions are compelling leaders to reassess energy supply and demand, altering competitive dynamics across industries. Businesses that adopt intelligent, energy-aware operations will have a distinct advantage.

The Duality of Energy Management

Energy must be examined at both ends: supply and demand. Decarbonizing supply represents one side of the energy coin and we are witnessing significant momentum in clean energy supply with the growth of the renewables market. The World Economic Forum (WEF) forecasts that renewables will become the world's top electricity source by 2026, with 50% more renewable capacity added globally in 2023 compared to 2022.¹⁸ Moreover, advances in technologies such as carbon capture utilization (CCUs), direct air capture, energy storage, and nuclear fusion (a technology being explored in France) are contributing to a clean energy landscape. This transition will depend on strategic choices for energy procurement such as Power Purchase Agreements (PPAs) and clean energy tariffs, as well as the ability to produce energy through decentralized energy systems. For example, microgrids help reduce carbon emissions by sourcing power from the grid when it predominantly uses low-carbon energy. Microgrids also rely on onsite renewable sources or stored energy when the grid is less sustainable, serving as powerful tools for both resiliency and sustainability strategies.

We also need to review the flip side of the energy coin—demand. Supply invariably follows demand, which makes it essential to reduce our reliance on fossil fuels through increased electrification. Reducing and electrifying energy demand represents more than half of the solution to deliver net-zero energy by 2050. Energy efficiency strategies also stand out as the most immediate and cost-effective approach to curtail energy demand and carbon emissions. Reducing energy demand is vital not only for addressing current energy shortages and rising prices, but also for accelerating our progress toward climate targets in this decade.

Additionally, aging infrastructure, insufficient investment in grid systems, and the rising incidence of climaterelated disasters underscore the urgent need for businesses to prioritize resilience in energy supply. Proactive planning for energy resilience ensures that critical systems and resources are available and/or quickly recovered and restored during extreme weather events. Renewable energy solutions are proven to outperform fossil fuel-based systems during extreme conditions. For example, integrating onsite solar power with battery storage in a microgrid significantly reduces reliance on grid-sourced energy, which can be vulnerable to outages during natural disasters.

The need for proactive energy management strategies on both the supply and demand side is clear. By implementing energy procurement strategies, businesses can reduce energy use, heighten energy resilience, and mitigate challenges such as operational downtime, reduced productivity, higher costs, and supply chain disruptions. The dual approach to addressing energy supply and demand for energy management is essential for a sustainable energy transition.

Source:

18. https://www.weforum.org/stories/2024/02/renewables-energy-capacity-demand-growth/



Getting Unstuck: The Gap Between Goals and Action

As of June 2024, <u>107 countries, responsible for over 80% of GHG emissions</u>, had adopted net-zero pledges however the stated commitments have yet to yield results. Similarly, a report by Climate Impact Partners estimates that 66% of Fortune Global 500 companies have stated climate commitments—but only 9% of organizations managed to act on their decarbonization roadmap in 2023. Indeed, it seems clear that most organizations are facing challenges when it comes to making tangible progress toward their goals.

The Way Forward: Action and Accountability

As we stand at this critical juncture, meeting long-term climate targets while addressing immediate energy needs is a pressing challenge for C-level leaders and their teams. The solution lies in reimagining energy management by combining clean energy supply, electrification of processes, and efficient resource use to achieve these key levers:



Manage energy and risk by guiding the development of science-based, net-zero ambition and achievement roadmaps, as well as climate risk mitigation and resilience planning.



Balance residual

emissions through offsetting and investing in nature-based solutions and renewable energy projects.

Reduce energy

consumption through strategic consultation and the orchestration of sitelevel decarbonization, boosting efficiency improvements and process electrification.

decarbonization practices

to address Scope 3

requirements.

Replace energy with lowcarbon alternatives to establish a robust renewable energy strategy like Power Purchase Agreements, Energy Attribute Certificates, and Tax Credit Transfers, to address emissions.



Download this Guide:

Ambition to Impact - Why So Few Companies Are Making Progress and How to Take Action Explore the top barriers preventing companies from turning their ambitions into impact – and how business leaders can drive action with next-level energy management strategies across their enterprise and value chains. Access this guide





Call to Action:

Nearly 70% of business leaders identify digital capabilities as a 'high' or 'very high' priority for net-zero target-setting and forecasting in the next two years, yet only 8% of leaders have the necessary software to achieve net-zero goals today. It's time to harness digital technologies to reimagine sustainability efforts, drive actions, and measure successes.

Why it Matters:

The power of digital solutions can elevate how businesses operate and perform in a low-carbon economy and within planetary boundaries. As nextlevel functionality such as AI, machine learning, and other innovative technologies are integrated into sustainability software, businesses will gain real-time insights to improve demand forecasting, optimize materials and resources, predict energy consumption and weather patterns, and other key business insights, transforming operational efficiencies and business resilience.

Lean into Technology and Step Up Sustainability Progress

To effectively manage the complexities of energy supply and demand, digital solutions are becoming increasingly vital. Forbes states, "the green transition and the digital transition have been two of the most significant global business trends over the past several years and are twin challenges: neither can succeed without the other."

Studies show that companies with a strategic focus on digital technologies are better equipped to adapt to shifting market conditions and to recognize and capitalize on opportunities for innovation. These companies also tend to be more efficient in their resource use, leading to lower costs and reduced environmental impact.¹⁹ For example, digital solutions can be used to integrate renewable energy sources into the power grid, allowing businesses to optimize energy use, reduce costs, and lessen their environmental impact. Highly connected sustainability software ecosystems enable more reliable and consistent implementation of sustainability strategies across an organization's entire operational footprint.

As businesses lean into next-level sustainability requirements by prioritizing emissions strategies, climate risk management, decarbonizing supply chains, and energy management, digital solutions will be pivotal to driving strategies.

According to Verdantix, nearly 70% of business leaders identify digital capabilities as a 'high' or 'very high' priority for net-zero target-setting and forecasting in the next two years.²⁰

The following are several use cases for digitally-enabled sustainability that offer innovative approaches to digitalization, transforming business operations, cultivating new market opportunities, and redefining industry leadership.





Sources:

19. https://www.sciencedirect.com/science/article/pii/S0040162522007934

20. https://www.verdantix.com/report/global-corporate-survey-2023-operational-excellence

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Carbon accounting and management:

As sustainability increasingly becomes a strategic priority, businesses are seeking effective tools to manage their environmental impact and to meet disclosure requirements. Sustainability software that contains both emissions measurement as well as emissions strategy tools are necessary for organizations to not only meet these requirements but drive connected carbon reduction outcomes in their operations. Four drivers are reported to be fueling the evolution of carbon accounting and management software:



New demands from regulators, investors, and large customers mean that shortcomings in GHG data are starting to have greater financial, legal and risk implications than they did previously.





Concrete decarbonization measures call not only for better data in passive carbon accounting, but also for new decision-making capabilities to enable active carbon management.



Data collection, integration and modeling requirements are becoming more challenging, especially due to the growing urgency to measure Scope 3 emissions.



Solutions will become more intuitive for nonexperts and the trend toward cloud solutions, including low-cost self-service solutions, will drive mass adoption and use.

For further insights on these drivers and other market trends for carbon accounting and management software, download this complimentary Gartner report.





Al for energy and sustainability: Al technology is playing a pivotal role in enabling digitally-driven sustainability initiatives. With Al, businesses can implement smarter sustainability strategies that not only optimize energy use but also enhance the performance of carbon reduction efforts. This is achieved through advanced emissions measurement and transforming data into powerful insights that inform an organization's best next action to achieve their energy targets. Reliance on accurate and complete data is more important than ever, as data is the backbone for all business decisions. Al solutions can help identify data errors and anomalies, alert users of critical energy optimizations actions needed and drive data collection necessary for complete Scope 1, 2 and 3 reporting and compliance. For instance, by using the computational power of Al, a company can process millions of data points across its entire value chain in minutes to collect, process and analyze the information needed to measure its entire Scope 3 emissions footprint, significantly lowering resources required and ensure emissions reporting compliance.

Beyond sustainability, AI is revolutionizing various carbon-intensive industries. In agriculture, for example, AIdriven sensors and satellite imagery predict crop yields and optimize resource management. Furthermore, in the context of circularity, AI is transforming product design by enabling businesses to simulate lifecycle scenarios and material flows. This capability empowers organizations to assess the environmental impact of their products from inception to disposal, fostering more sustainable design and reuse practices.

As AI technology continues to evolve, its applications in resource management and material science particularly in sectors like fashion and pharmaceuticals—are expanding. AI is discovering new materials and analyzing their interactions in both natural and fabricated environments, promoting sustainability strategies, alongside. Additionally, AI can enhance climate risk management by identifying early warning systems and improving long-term hazard modeling. As we look to the future, the potential of AI to drive climate data analytics and support robust risk management strategies is immense, paving the way for tailored decarbonization strategies that significantly reduce carbon footprints.



92% of companies plan to invest more in gen Al over the next three years. <u>McKinsey & Company,</u> January 2025

EcoStruxure™ Resource Advisor is Schneider Electric's energy and sustainability software solution that serves as both the command center and coordination layer for strategy and decision-making. By embedding AI agents into adaptive workflows that seamlessly integrate with human experts and enterprise systems, it is transforming disconnected sustainability efforts into an intelligent ecosystem. Discover how leading executives are using this software to drive sustainable impacts at resourceadvisor.com/sustainability

Harnessing AI for Sustainable Innovation

In the realm of AI deployment, leading companies must confront the significant challenges associated with biases and the substantial carbon footprint of AI technologies. While some of the concerns surrounding AI are justified, it is also essential to recognize the extraordinary potential of AI when utilized responsibly and ethically.

Over the past decade, the development of machine learning and AI solutions has been pivotal in helping organizations understand energy consumption patterns, manage risks in volatile energy markets, and navigate the complexities of sustainability, decarbonization, and emissions measurement and reporting. A unique combination of world-class expertise, a strong commitment to corporate responsibility, ethical business practices, and a passion for sustainability is crucial for any company aiming to lead in AI innovation. This foundation enables the delivery of advanced software solutions that leverage Generative and Agentic AI, while also acknowledging the increased responsibility that comes with such advancements.

When deploying AI in their own organization or partnering with vendors who use AI in their solutions, executives must prioritize data security and privacy but also deploy AI that is sustainable and trustworthy.



Frugal AI

To balance the energy intensity of deploying AI solutions, Schneider Electric employs a concept called Frugal AI. Frugal AI is about always applying the most simple, smallest model to solve the problem at hand. Frugal AI also means avoiding the use of AI whenever possible, in favor of simple solutions like traditional, deterministic software or approaches from applied mathematics which leverage basic modeling or optimization techniques.

Being more selective in AI applications can lead to reduced resource consumption. "The question is whether you want a big model that can do a lot of things or a small model that can do fewer things. Frugality means obtaining the results you want without using more resources than needed. This means having the right amount of data and complexity in the model, depending on the problem you want to solve." Claude Le Pape-Gardeux, Data and AI Domain Leader, Schneider Electric. <u>Access this podcast</u> for further insights.



Responsible AI

The journey toward responsible and ethical AI doesn't end at deployment. It requires ongoing assessment, learning, and improvement as these technologies mature and our understanding evolves. Companies employing AI in their operations must apply practical governance approaches that combine technical safeguards like fairness assessments and representative training data with thoughtful human oversight. This balanced methodology ensures AI solutions creates genuine business value while aligning with organizational values and broader societal expectations — all critical components for sustainable AI adoption that stands the test of time.





Collaborative Intelligence

A purpose-driven approach to AI is essential, recognizing that while traditional techniques can solve some problems, AI offers unprecedented solutions to complex challenges, such as the calculation of Scope 3 emissions across all 15 categories. The concept of Collaborative Intelligence, which combines the expertise of leading sustainability professionals with cutting-edge software, represents a promising path forward. This approach not only aims to alleviate the burdens of complex calculations but also empowers organizations to focus on meaningful actions towards intelligent decarbonization.

By integrating Al's predictive modeling and data analysis with human ingenuity, we can develop more sophisticated strategies for environmental sustainability. Machine learning algorithms can optimize renewable energy systems, predict carbon emission patterns, and simulate complex climate scenarios, while human experts provide critical context, ethical considerations, and innovative solutions. This symbiotic approach enables more precise carbon tracking, accelerates clean technology development, and helps design adaptive climate mitigation strategies that balance technological efficiency with human values and local ecosystem needs.

The potential of digitally-enabled sustainability is poised to enhance business operations and performance in a low-carbon economy while respecting planetary limits. By incorporating carbon accounting and management software and digital tools with advanced AI functionality, companies can improve demand forecasting, optimize materials and resources, predict energy usage and weather patterns, and uncover other crucial business insights, ultimately transforming operational efficiency and resilience. It's time to lean into digital technologies to step up next-level sustainability practices.



Conclusion

The climate crisis demands immediate and decisive action from the global business community. Corporate leaders and their teams have an integral role in driving transformation and resilience to support a low-carbon economy and protect planetary boundaries.

As leaders set short-term and long-term strategies, against the backdrop of evolving regulations, stakeholder requirements, and political headwinds, it is essential to be progressive and align business models with next-level sustainability practices. By prioritizing climate adaptation, circularity, proactive energy management, and leveraging digital technologies, companies can not only mitigate risks but can also harness new opportunities for growth and market competitiveness. This is a pivotal moment for corporate leaders to embrace transformation, ensuring their strategies are not only responsive to current challenges but also proactive in shaping a sustainable future.

Consider the path your transformative business will take and what actions your team will drive to support corporate action. Collaborating with partners who can navigate next-level sustainable practices in an evolving energy landscape is crucial. Schneider Electric stands as an experienced and trusted corporate sustainability advisor. Stay current by <u>bookmarking</u> this Perspectives' site, <u>subscribing</u> to our global and regional insights, or by <u>reaching out</u> to Schneider Electric Sustainability Business experts to help your organization achieve impact-driven and transformative change.



For more information on our view of today's changing energy landscape, visit **perspectives.se.com** or **contact our experts**.

